

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of

Inventor(s): Mills

Group Art Unit: 1754

App'n Ser. No.: 09/110,717

Examiner(s): Kalafut for the

Secret Committee

Filing Date: 07/07/1998

Title: BATTERY, ELECTROLYTIC CELL, AND FUEL CELL

August 10, 2005

## NEW INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Attached are PTO/SB/O8B forms listing the enclosed documents. Copies of the enclosed documents are attached to the presently filed Information Disclosure Statement and/or to the Attachments to the Response filed herewith.

Applicant advises the Secret Committee that took over examination of his pending applications relating to his lower-energy hydrogen technology that Applicant has made a concerted effort to review those applications for documents cited therein and to make those documents of record in each case. Because, however, Applicant's lower-energy hydrogen applications were consolidated under a single Examiner, Bernard Eng-Kie Souw, Applicant believes that the Committee should already be familiar with the totality of these documents. Nonetheless, for purposes of completeness and ensuring that all cited documents have been brought to the PTO's attention, Applicant provides the following list of applications relating to his lower-energy hydrogen technology:

Application No. 09/110,117 Page 2 of 3

U.S. Ser. No.	Filing Date
10/513,026	11/01/04
10/494,571	5/6/04
10/469,913	9/5/2003
10/331,725	12/31/02
10/319,460	11/27/02
09/669,877	9/27/00
09/813,792	3/22/01
09/513,768	2/25/00
09/678,730	10/4/00
09/362,693	7/29/99
09/181,180	10/28/98
09/225,687	1/6/99
09/110,717	7/7/98
09/110,694	7/7/98
09/501,622	2/9/00
09/501,621	2/9/00
09/111,003	7/7/98
09/111,160	7/7/98
09/110,678	7/7/98
09/009,455	1/20/98
09/009,294	1/20/98
09/008,947	1/20/98
09/009,837	1/20/98
08/467,051	6/6/95
08/467,911	6/6/95
08/416,040	4/3/95
08/107,357	8/16/93
08/075,102	6/11/93
07/825,845	1/28/92
07/626,496	12/12/90
07/345,628	4/28/89
07/341,733	4/21/89

Application No. 09/110,117 Page 3 of 3

If necessary, please accept this Information Disclosure Statement under Rule 97(c) and charge the requisite Rule 17(p) fee to our Deposit Account No. 50-0687 under Order No. **62-226** for which purposes this paper is submitted in duplicate.

This Information Disclosure Statement is intended to fully comply with the rules, but should the Examiner find any part of its required content to have been omitted, prompt notice to that effect is earnestly solicited, along with additional time under Rule 97(f), to enable Applicant to fully comply.

Consideration of the foregoing remarks and enclosures, including return of a copy of the attached PTO/SB/08A and B forms with the Examiner's initials in the left column per MPEP § 609 and an early action on the merits of this application, are earnestly solicited.

Respectfully submitted, Manelli Denison & Selter PLLC

Βv

Jeffrey S. Melcher Reg. No.: 35,950

Tel. No.: (202) 261-1045 Fax. No.: (202) 887-0336

Customer No. 20736

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s	in & Britute	for form 1449B/PTO			Сотр	lete if Known
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	ST	ATEMENT B	Y	APPLICANT	First Named Inventor	Mills
					Group Art Unit	1754
		(use as many she	ets a	s necessary)	Examiner Name	Kalafut
S	Sheet	1		12	Attorney Docket Number	

		OTHER PRIOR ART — NON PATENT LITERATURE DOCUMENTS	
Examine r Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	58	R. L. Mills, "Classical Quantum Mechanics," Physics Essays, Vol. 16, No. 4, December, (2003), pp. 433-498. (Web Publication Date: May 23, 2002.)	
	60	R. L. Mills, J. Sankar, A. Voigt, J. He, B. Dhandapani, "Synthesis of HDLC Films from Solid Carbon," Journal of Materials Science, in press. (Web Publication Date: May 3, 2002.)	
	77	J. Phillips, R. L. Mills, X. Chen, "Water Bath Calorimetric Study of Excess Heat in 'Resonance Transfer' Plasmas," J. Appl. Phys., Vol. 96, No. 6, (2004) 3095–3102. (Web Publication Date: June 16, 2003.)	
	80	R. L. Mills, "The Fallacy of Feynman's Argument on the Stability of the Hydrogen Atom According to Quantum Mechanics," Annales de la Fondation Louis de Broglie, submitted. (Web Publication Date: Jan. 27, 2003.)	
	81	R. Mills, P. Ray, B. Dhandapani, W. Good, P. Jansson, M. Nansteel, J. He, A. Voigt, "Spectroscopic and NMR Identification of Novel Hydride Ions in Fractional Quantum Energy States Formed by an Exothermic Reaction of Atomic Hydrogen with Certain Catalysts," European Physical Journal: Applied Physics, 28, (2004), 83–104. (Web Publication Date: Feb. 21, 2003.)	
	88	R. Mills, J. Sankar, A. Voigt, J. He, P. Ray, B. Dhandapani, "Role of Atomic Hydrogen Density and Energy in Low Power CVD Synthesis of Diamond Films," Thin Solid Films, 478, (2005) 77–90. (Web Publication Date: Dec. 22, 2003.)	
	94	R. L. Mills, "The Nature of the Chemical Bond Revisited and an Alternative Maxwellian Approach," Physics Essays, in press. (Web Publication Date: Aug. 6, 2003.)	
	96	J J. Phillips, C.K. Chen, R. L. Mills, "Evidence of the Production of Hot Hydrogen Atoms in RF Plasmas by Catalytic Reactions Between Hydrogen and Oxygen Species," Spectrochimica Acta Part B: Atomic Spectroscopy, submitted. (Web Publication Date: Sept. 12, 2003.)	
	97	R. L. Mills, P. Ray, B. Dhandapani, "Evidence of an Energy Transfer Reaction Between Atomic Hydrogen and Argon II or Helium II as the Source of Excessively Hot H Atoms in RF Plasmas," Journal of Plasma Physics, in press. (Web Publication Date: Sept. 26, 2003.)	
	98	R. L. Mills, Y. Lu, J. He, M. Nansteel, P. Ray, X. Chen, A. Voigt, B. Dhandapani, "Spectral Identification of New States of Hydrogen," New Journal of Chemistry, submitted. (Web Publication Date: Nov. 18, 2003.)	

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Substitut	INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Сотр	lete if Known	
HALL		Application Number	09/110,117		
INFORMATION DISCLOSURE		Filing Date	07/07/1998		
SI	STATEMENT BY APPLICANT	First Named Inventor	Mills		
	(use as many she	ets a	s necessary)	Group Art Unit	1754
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Sheet	2		12	Attorney Docket Number	

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100	R. Mills, B. Dhandapani, J. He, "Highly Stable Amorphous Silicon Hydride from a Helium Plasma Reaction," Materials Chemistry and Physics, submitted. (Web Publication Date: Nov. 17, 2003.)					
101	R. L. Mills, Y. Lu, M. Nansteel, J. He, A. Voigt, B. Dhandapani, "Energetic Catalyst-Hydrogen Plasma Reaction as a Potential New Energy Source," Division of Fuel Chemistry, Session: Chemistry of Solid, Liquid, and Gaseous Fuels, 227th American Chemical Society National Meeting, March 28-April 1, 2004, Anaheim, CA.					
102	R. L. Mills, "Exact Classical Quantum Mechanical Solutions for One- through Twenty- Electron Atoms," Phys. Essays, submitted. (Web Publication Date: April 22, 2004.)					
103	R. L. Mills, Dhandapani, W. Good, J. He, "New States of Hydrogen Isolated from K <sub>2</sub> CO <sub>3</sub> Electrolysis Gases," Electrochim. Acta, submitted. ( <i>Web Publication Date: April 28, 2004.</i> )					
104	R. L. Mills, Y. Lu, M. Nansteel, J. He, A. Voigt, W. Good, B. Dhandapani, "Energetic Catalyst-Hydrogen Plasma Reaction as a Potential New Energy Source," Division of Fuel Chemistry, Session: Advances in Hydrogen Energy, 228th American Chemical Society National Meeting, August 22–26, 2004, Philadelphia, PA.	,				
113	R. Mills, "Physical Solutions of the Nature of the Atom, Photon, and Their Interactions to Form Excited and Predicted Hydrino States", New Journal of Physics, submitted.					
114	R. Mills, K. Akhtar, B. Dhandapani, "Tests of Features of Field-Acceleration Models for the Extraordinary Selective H Balmer $\alpha$ Broadening in Certain Hydrogen Mixed Plasmas," Journal of Applied Physics, submitted. (web publication June 24, 2005, www.blacklightpower.com).					
	100 101 102 103 104	<ul> <li>No. ' item (book, magazine, journal, serial, symposium, cafalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.</li> <li>R. Mills, B. Dhandapani, J. He, "Highly Stable Amorphous Silicon Hydride from a Helium Plasma Reaction," Materials Chemistry and Physics, submitted. (Web Publication Date: Nov. 17, 2003.)</li> <li>R. L. Mills, Y. Lu, M. Nansteel, J. He, A. Voigt, B. Dhandapani, "Energetic Catalyst-Hydrogen Plasma Reaction as a Potential New Energy Source," Division of Fuel Chemistry, Session: Chemistry of Solid, Liquid, and Gaseous Fuels, 227th American Chemical Society National Meeting, March 28-April 1, 2004, Anaheim, CA.</li> <li>R. L. Mills, "Exact Classical Quantum Mechanical Solutions for One- through Twenty-Electron Atoms," Phys. Essays, submitted. (Web Publication Date: April 22, 2004.)</li> <li>R. L. Mills, Dhandapani, W. Good, J. He, "New States of Hydrogen Isolated from K<sub>2</sub>CO<sub>3</sub> Electrolysis Gases," Electrochim. Acta, submitted. (Web Publication Date: April 28, 2004.)</li> <li>R. L. Mills, Y. Lu, M. Nansteel, J. He, A. Voigt, W. Good, B. Dhandapani, "Energetic Catalyst-Hydrogen Plasma Reaction as a Potential New Energy Source," Division of Fuel Chemistry, Session: Advances in Hydrogen Energy, 228th American Chemical Society National Meeting, August 22–26, 2004, Philadelphia, PA.</li> <li>R. Mills, "Physical Solutions of the Nature of the Atom, Photon, and Their Interactions to Form Excited and Predicted Hydrino States", New Journal of Physics, submitted.</li> <li>R. Mills, K. Akhtar, B. Dhandapani, "Tests of Features of Field-Acceleration Models for the Extraordinary Selective H Balmer α Broadening in Certain Hydrogen Mixed Plasmas," Journal of Applied Physics, submitted. (web publication June 24, 2005,</li> </ul>				

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	9		_	PTO/SB/08B (Modified)
ESPECIAL FOR FORM 1449B/PTO		Comp	lete if Known	
			Application Number	09/110,117
INFORMATION DISCLOSURE			Filing Date	07/07/1998
S	STATEMENT BY APPLICANT		First Named Inventor	Mills
			Group Art Unit	1754
	(use as many sheets as necessary)		Examiner Name	Kalafut
Sheet	3	12	Attorney Docket Number	

	Τ	OTHER PRIOR ART — NON PATENT LITERATURE DOCUMENTS	,
Examine r Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	105	J. Phillips, C. K. Chen, R. L. Mills, "Evidence of Catalytic Production of Hot Hydrogen in RF-Generated Hydrogen/Argon Plasmas," J. Appl. Physics, submitted. (Web Publication Date: September 7, 2004.)	
	106	R. L. Mills, "Exact Classical Quantum Mechanical Solution for Atomic Helium which Predicts Conjugate Parameters from a Unique Solution for the First Time," Foundations of Science, submitted. (Web Publication Date: October 28, 2004.)	
	107	R. L. Mills, "Maxwell's Equations and QED: Which is Fact and Which is Fiction," Physica Scripta, submitted. (Web Publication Date: October 28, 2004.)	
	108	R. L. Mills, J. He, M. Nansteel, B. Dhandapani, "Catalysis of Atomic Hydrogen to New Hydrides as a New Power Source," International Journal of Global Energy Issues (IJGEI). Special Edition in Energy System, submitted. (Web Publication Date: April 4, 2005.)	
	109	R. L. Mills, M. Nansteel, J. He, B. Dhandapani, "Low-Voltage EUV and Visible Light Source Due to Catalysis of Atomic Hydrogen," J. Plasma Physics, submitted. (Web Publication Date: April 15, 2005.)	
	110	R. L. Mills, J. He, Z, Chang, W. Good, Y. Lu, B. Dhandapani, "Catalysis of Atomic Hydrogen to Novel Hydrides as a New Power Source," Prepr. Pap.—Am. Chem. Soc., Div. Fuel Chem. 2005, 50(2). (Web Publication Date: April 22, 2005.)	
	111	R. L. Mills, J. He, Z, Chang, W. Good, Y. Lu, B. Dhandapani, "Catalysis of Atomic Hydrog Novel Hydrogen Species H (1/4) and H <sub>2</sub> (1/4) as a New Power Source," Thermochimica submitted. (Web Publication Date: May 6, 2005.)	
	112	R. L. Mills, J. He, Y. Lu, Z, M. Nansteel, Chang, B. Dhandapani, "Comprehensive Identific and Potential Applications of New States of Hydrogen," Central European Journal of Physubmitted. (Web Publication Date: May 9, 2005.)	

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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here is English language Translation is attached.

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TGLUCE (S)	e for form 1449B/PTO			Comp	lete if Known
				Application Number	09/110,717
IN	FORMATION	l DI	SCLOSURE	Filing Date	07/07/1998
STATEMENT BY APPLICANT		First Named Inventor	Mills		
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Sheet	4	of	12	Attorney Docket Number	

		OTHER PRIOR ART — NON PATENT LITERATURE DOCUMENTS	
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		CRITCHLEY <i>et al</i> , "Energy shifts and forbidden transitions in H <sub>2</sub> due to electronic g/u symmetry breaking", <i>Molecular Physics</i> , 2003, Vol. 101, Nos. 4-5, pp. 651-661, Taylor & Francis Ltd.	
		GAMBUS <i>et al.</i> , "Spectroscopic Study or Low-Pressure Water Plasmas and Their Reactions with Liquid Hydrocarbons", <i>Energy &amp; Fuels</i> , 2002, 16, pp. 172-176, American Chemical Society	
		CVETANOVIC <i>et al.</i> , "Excessive Balmer line broadening in a plane cathode abnormal glow discharge in hydrogen", <i>Journal of Applied Physics</i> , 97, 033302 (2005), American Institute of Physics	
		AKATSUKA <i>et al.</i> , "Stationary population inversion of hydrogen in an arc-heated magnetically trapped expanding hydrogen-helium plasma jet", <i>Physical Review E</i> , 49, 2, pp. 1534-1544, February, 1994, The American Physical Society	
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		AHN, "Hydrogen Storage in Metal-Modified Single-Walled Carbon Nanotubes", Division of Engineering and Applied Science, California Institute of Technology, September 15, 2001	
		DUAN et al., "Numerical calculation of energies of some excited states in a helium atom", Eur. Phys. J., D 19, (2002), pp. 9-12, Societa Italiana di Fisica, Springer-Verlag 2002	
		NIXON et al., "Formation and structure of the potassium graphites", Brit. J. Appl. Phys., Ser. 2, Vol., 1, pp. 291-299, Great Britain, 2002	
		ZELLINGER, "Experiment and the foundations of quantum physics", <i>Reviews of Modern Physics</i> , Vol 71, No. 2, pp. S288-S297, Centenary 1999, The American Physical Society	

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				Group Art Unit	1754
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Sheet	5	of	12	Attorney Docket Number	

	1	OTHER PRIOR ART — NON PATENT LITERATURE DOCUMENTS	
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		COTTON et al, "Complexes of Cyclic 2-Oxacarbenes, I. A Spontaneous Cyclization to Form a Complex of 2-Oxaclyclopentylidene", Journal of the American Chemical Society, 93:11, pp. 2672-2676, June 2, 1971	
		LINDSAY et al., "A remeasurement of the 2.4 $\mu$ m spectrum of $J = H_2$ pairs in a parahydrogen crystal", Journal of Molecular Spectroscopy, 218. Pp. 131-133, 2003	
		JUAREZ et al, "Photoelectron angular distributions of rotationally resolved states in para-H2+: A closer to the dynamics of molecular photoionisation", The University of Manchester Atomic, Molecular & Laser Manipulation Group, pp.1-5	
		WEISSTEIN, "Ortho-Para Hydrogen", http://scienceworld.wolfram.com/physics/Ortho-ParaHydrogen.html	
		SMITH, "Infrared spectra of BO₂- in the alkali halides-L. Potassium and rubidium halides", <i>Spectrochimica Act</i> s, Vol. 30A, pp. 875-882, Pergamon Press, 1974	
		LEITCH et al., "Raman Specreoscopy of Hydrogen Molecules in Crystalline Silicon", Physical Review Letters, 81:2, pp. 421-424, July 13, 1998, The American Physical Society	
		CHEN <i>et al.</i> , "Key to Understanding Interstitial H <sub>2</sub> in Si", <i>Physical Review Letters</i> , 88:10, pp. 105507-1 - 105507-4, March 11, 2002, The American Physical Society	
		CHEN et al., "Rotation of Molecular Hydrogen in Si: Unambiguous Identification of Ortho-H <sub>2</sub> and Para-D <sub>2</sub> ", <i>Physical Review Letters</i> , 88:24, pp. 245503-1 - 245503-4, June 17, 2002, The American Physical Society	
		LAVROV <i>et al.</i> , "Ortho and Para Interstitial H <sub>2</sub> in Silicon", <i>Physical Review Letters</i> , 89:21, pp. 215501-1 - 215501-4, November 18, 2002, The American Physical Society	
<del>-</del>		STAVOLA et al, "Interstitial $H_2$ in Si: are all problems solved?", Physica B, pp. 58-66, 200s Elsevier B.V.	

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Complete if Known tute for form 1449B/PTO **Application Number** 09/110,717 Filing Date 07/07/1998 **INFORMATION DISCLOSURE** STATEMENT BY APPLICANT First Named Inventor Mills Group Art Unit 1754 (use as many sheets as necessary) **Examiner Name** Kalafut 6 of 12 **Attorney Docket Number** Sheet

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Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		MILLS et al., "Catalysis of Atomic Hydrogen to Novel Hydrides as a New Power Source", pp. 1-8, BlackLight Power, Inc.	
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		"Infrared spectra of the metaborate ion in alkali halide solid solution", Research Notes, pp. 600-602	
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		SMITH, "Infrared spectra of BO₂-in the alkali halides-I. Potassium and rubidium halides", <i>Spectrochimica Acta</i> , 30A, pp. 875-882, 1974, Pergamon Press	
		SCHOENFELDER et al., "Kinetics of Thermal Decomposition of TiH <sub>2</sub> ", J. Vac. Sci. Technol., 10:5, pp. 862-870, Sept./Oct. 1973	
		"Emission Characteristics for Scandium Type Dispenser Cathodes", HeatWave Labs, Inc., TB-119, May 24, 2001, Spectra-Mat, Inc.	
		"Emission Characteristics of 'M Type' Dispenser Cathodes", HeatWave Labs, Inc., TB-117, May 24, 2001, Spectra-Mat, Inc.	
		"Practical Aspects of Modern Dispenser Cathodes", <i>Microwave Journal</i> , September, 1979	

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		OTHER PRIOR ART — NON PATENT LITERATURE DOCUMENTS	
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		"Standard Series Barium Tungsten Dispenser Cathodes", HeatWave Labs, Inc., TB-198, July 29, 2002, Spectra-Mat, Inc.	
		ABATE et al., "Optimization and enhancement of H ions in a magnetized sheet plasma", Review of Scientific Instruments, 71:10, pp. 3689-3695, October 2000, American Institute of Physics	
		CHABERT <i>et al.</i> , "On the influence of the gas velocity on dissociation degree and gas temperature in a flowing microwave hydrogen discharge", <i>Journal of Applied Physics</i> , 84:1, pp. 161-167, July 1, 1009, American Institute of Physics	
		GORDON et al., "Energy coupling efficiency of a hydrogen microwave plasma reactor", Journal of Applied Physics, 89:3, pp. 1544-1549, February 1, 2001, American Institute of Physics	
		RADOVANOV et al., "Time-resolved Balmer-alpha emission from fast hydrogen atoms in low pressure, radio-frequency discharges in hydrogen", Appl. Phys. Lett., 66:20, pp. 2637-2639, May 15, 2995	
		DJUROVIC <i>et al.</i> , "Hydrogen Balmer alpha line shapes for hydrogen-argon mixtures in a low-pressure rf discharge", <i>J. Appl. Phys.</i> , 74:11, pp. 6558-6565, December 1, 1993, American Institute of Physics	
		KONJEVIC, "Plasma Broadening and Shifting of Non-Hydrogenic Spectral Lines: Present Status and Applications", <i>Physics Reports</i> , 315, pp. 339-401, 1999, Elsevier	
		BENESCH <i>et al.</i> , "Line shapes of atomic hydrogen in hollow-cathode discharges", <i>Optics Letters</i> , 9:8, pp. 338-340, August 1984, Optical Society of America	
		AYERS, et al., "Shapes of atomic-hydrogen lines produced at a cathode surface", Physical Review A, 37:1, pp. 194-200, January 1, 1988, The American Physical Society	
		ADAMOV, et al., "Doppler Spectroscopy of Hydrogen and Deuterium Balmer Alpha Line in an Abnormal Glow Discharge", IEEE Transactions on Plasma Science, 31:3, pp. 444-454, June 3, 2003	
Examiner Signature		Date Considered	

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Benestitute for form 1449B/PTO Complete if Known **Application Number** 09/110,717 Filing Date **INFORMATION DISCLOSURE** 07/07/1998 STATEMENT BY APPLICANT First Named Inventor Mills **Group Art Unit** 1754 (use as many sheets as necessary) **Examiner Name** Kalafut Sheet 8 of 12 **Attorney Docket Number** 

		OTHER PRIOR ART — NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
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